

FIGURE 2.1

The mode (x_1), the median (x_2) and the mean (m) for a continuous probability distribution function.

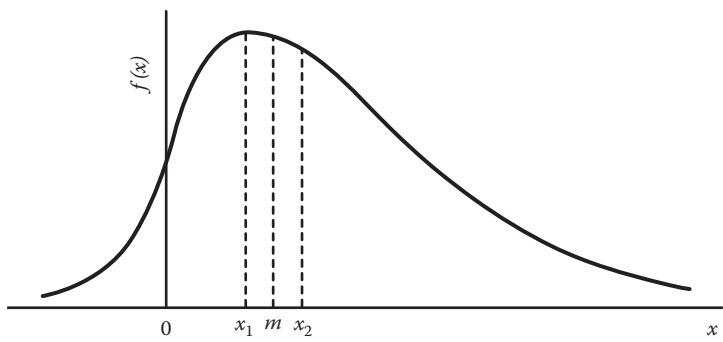
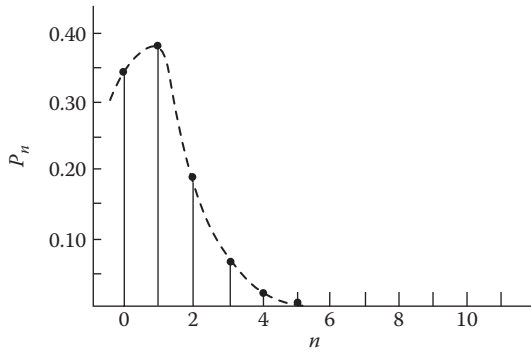
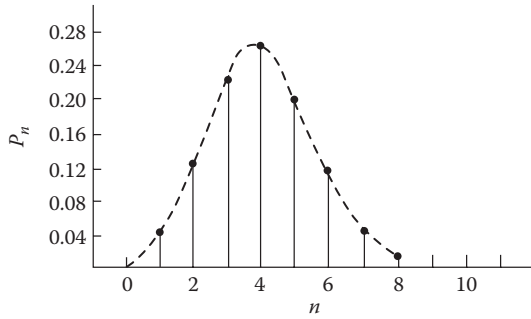


FIGURE 2.2

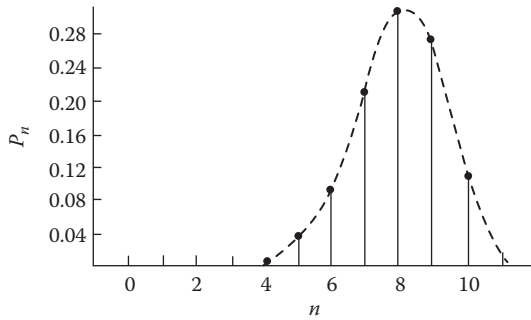
Three binomial distributions with $N=10$ and (a) $p=0.1$, (b) $p=0.4$, and (c) $p=0.8$.



(a)



(b)



(c)

FIGURE 2.3

Three Poisson distributions: (a) $m=5$, (b) $m=10$, (c) $m=20$.

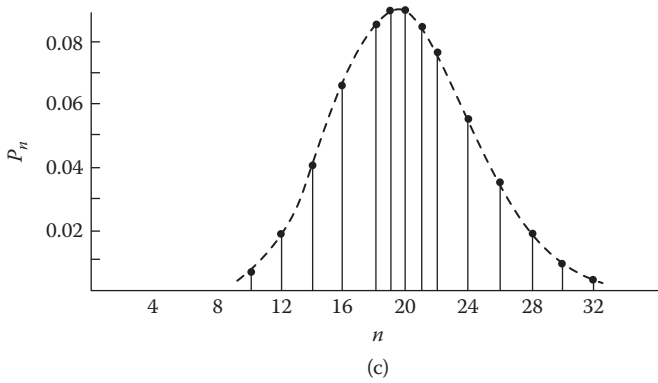
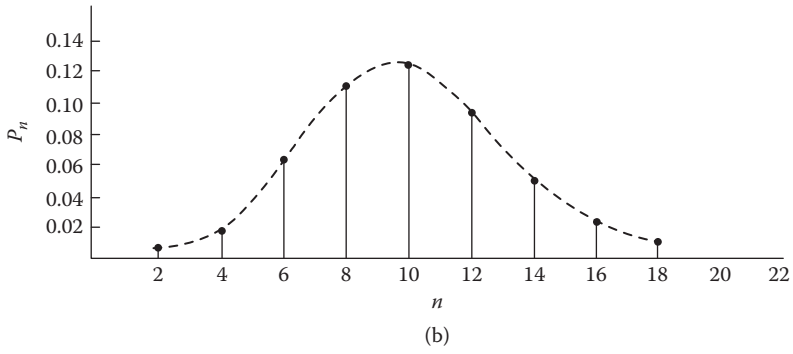
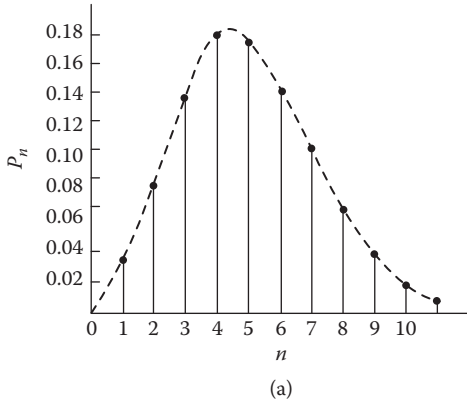


FIGURE 2.4

A normal (Gaussian) distribution.

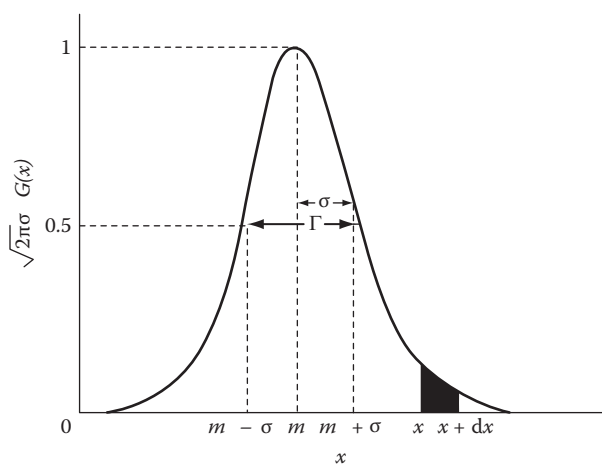


FIGURE 2.5

The cumulative normal distribution is equal to the shaded area under the Gaussian curve.

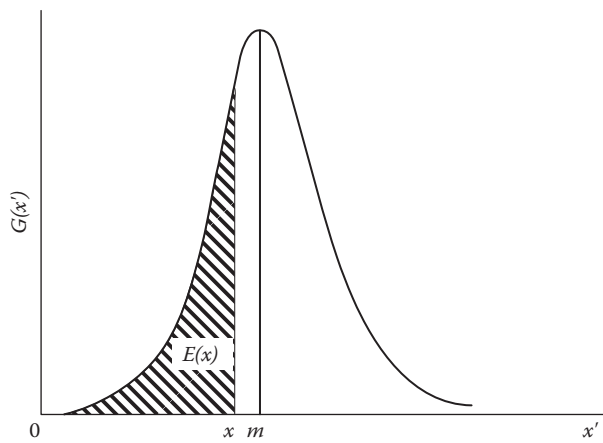


FIGURE 2.6

The error function.

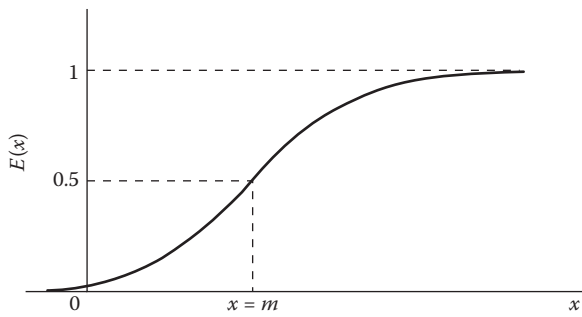


FIGURE 2.7

The shaded areas represent the fraction of defective rods, Example 2.12.

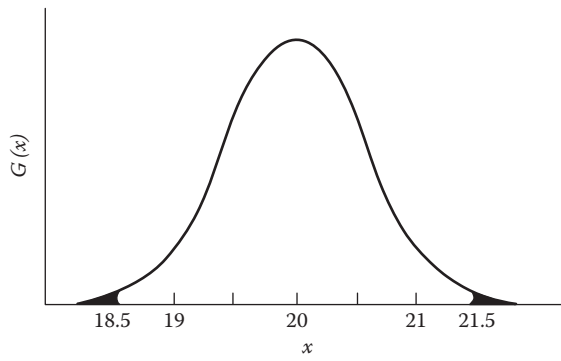


FIGURE 2.8

Comparison between a Poisson distribution with $m=25$ and a Gaussian distribution with the same average and standard deviation $\sigma=\sqrt{m}=5$.

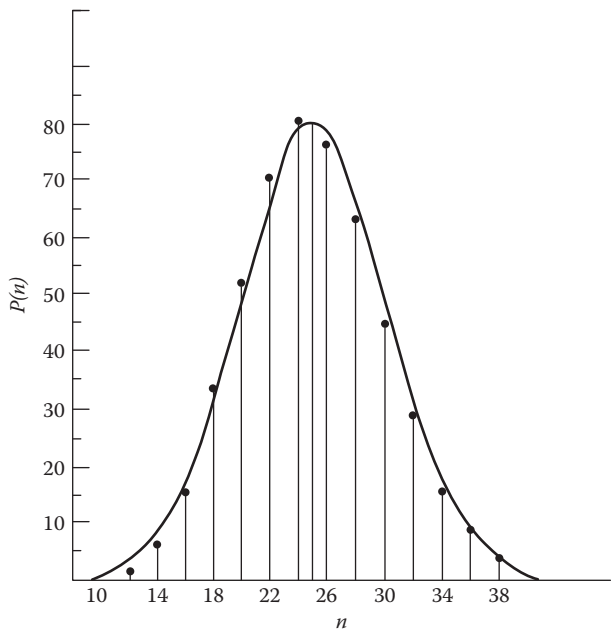


FIGURE 2.9

A Lorentzian distribution peaking at $x=25$ and having a FWHM equal to 5.

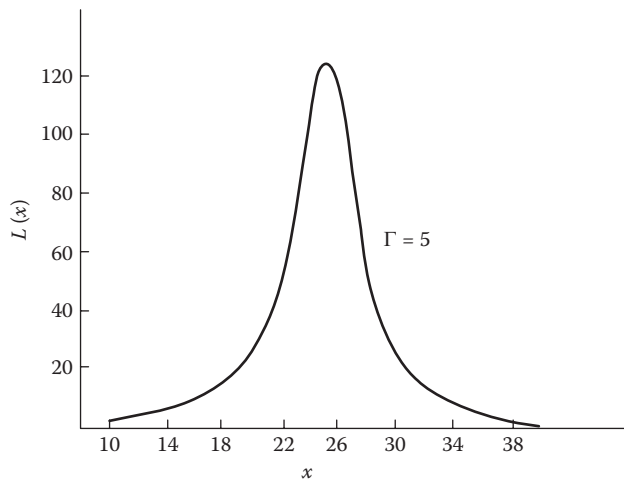


FIGURE 2.10

The distribution of the frequency of occurrence of individual results of a series of identical measurements tends to follow a Gaussian distribution.

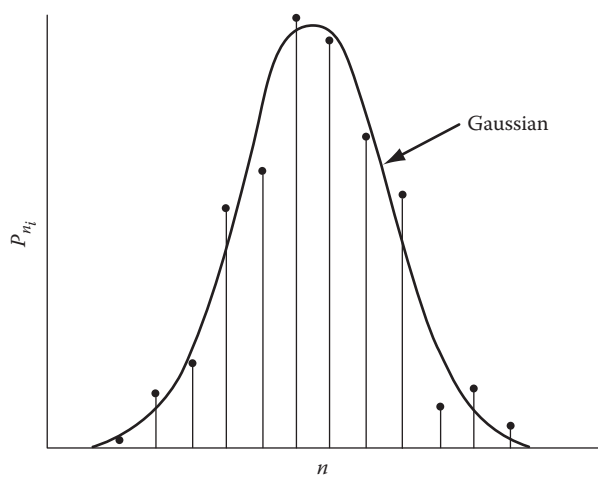


FIGURE 2.11

The probability that x will exceed x_a , where $x_a = x_n + \sigma$, is 15.9% (shaded area). The confidence limit is $1 - 0.159$, or 84.1%.

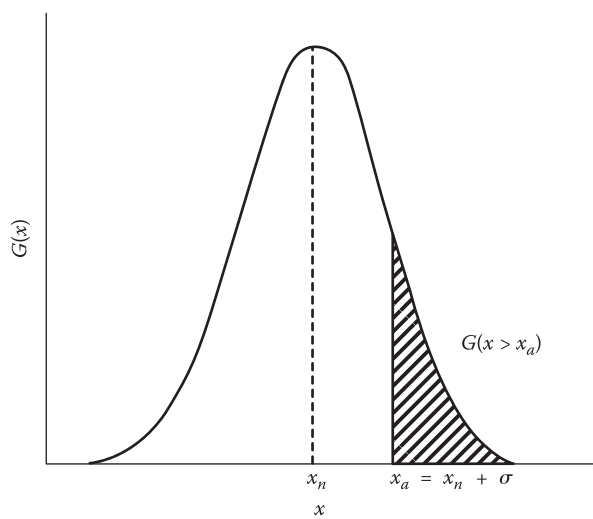


FIGURE 2.12

The meaning of the critical detection limit (CDL) and minimum detectable activity (MDA) in terms of the confidence limits defined by α and β .

